IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

APPLICANTS: Williams et al.

SERIAL NO.: 09/255,222 GROUP ART UNIT: 1724

FILED: February 22, 1999 EXAMINER: Hruskoci, P.

FOR: UREA SULFATE AND UREA HYDROCHLORIDE IN PAPER AND PULP PROCESSING

ATTORNEY DOCKET NO.: P2160/187847

Certificate of Mailing

I hereby certify that this correspondence being deposited with the United States Postal Service as certified first class mail in an envelope addressed to: Mail Stop Appeal Brief - Patent, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on April 14, 2004.

Emily Giuda

Mail Stop Appeal Brief - Patent
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

DATE: April 14, 2004

APPEAL BRIEF

This appeal brief is being filed pursuant to 37 C.F.R. § 1.192 and appeals the decision of the Examiner mailed May 15, 2003.

REAL PARTY IN INTEREST

The entire interest in the present application is assigned to Peach State Labs, Inc., 180 Burlington Drive, Rome, Georgia 30161.

RELATED APPEALS AND INTERFERENCES

Neither Appellants, their representatives, nor Peach State Labs, Inc. is aware of any related appeals or interferences.

STATUS OF CLAIMS

Claims 1-6 and 36 are pending in this application. Claims 7-35 were canceled during prosecution. Therefore, only rejected claims 1-6 and 36, set forth in Appendix A, are the subject of this Appeal and before the Board for consideration on the merits.

STATUS OF AMENDMENTS

A November 17, 2003 Amendment and Response to Office Action submitted subsequent to the May 15, 2003 final Office Action was entered in a January 23, 2004 Advisory Action.

SUMMARY OF INVENTION

This invention relates to the use of urea sulfate or urea hydrochloride in processes for making paper and pulp. In particular, this invention relates to the use of

urea sulfate in place of mineral acids such as sulfuric acid or hydrochloric acid, or in place of aluminum sulfate in papermaking and pulping processes.

One embodiment of this invention, claimed in claims 1-6, relates to the use of urea sulfate in process streams in the paper and pulping industries in addition to, or in place of, in whole or in part, sulfuric acid, alum (aluminum sulfate hydrate), and/or hydrochloric acid. These uses of urea sulfate decrease the amount of sulfuric acid or alum required by a pulping or papermaking processes. The use of urea sulfate in the papermaking or pulping process streams or solutions described above to replace alum may result in flocculating or precipitating many materials, including fibers, dyestuffs, sizing, filler particles, resins, or pitch in that process stream or solution. In this embodiment of the invention, an effective amount of urea sulfate may be added to any process stream or solution where aluminum sulfate hydrate or papermaking alum would be used to flocculate or precipitate any material in that process stream.

Another embodiment of this invention, claimed in claim 36, relates to the use of urea sulfate in any of the papermaking or pulping process streams or solutions described above to adjust the pH of that process stream or solution. In this embodiment of the invention, urea sulfate may be used in any process stream or solution where a mineral acid would be used to adjust pH.

Urea sulfate is considerably less corrosive to steel and easier to handle than is sulfuric acid or alum, and does not require U.S. Department of Transportation reporting as "Corrosive" or "Hazardous" material.

ISSUES

The following issues are presented by this appeal.

Whether claim 36 is unpatentable over U.S. Patent No. 5,234,466 to Sargent et al.

Whether claims 1-6 are unpatentable over U.S. Patent No. 4,911,970 to Lindstrom et al. in view of Sargent et al.

GROUPING OF CLAIMS

The claims do not all stand or fall together: the following groups are each separately patentable in view of the art relied upon by the Examiner. Group I includes claim 36 and Group II includes claims 1-6.

Appellants respectfully submit that the claims should be grouped separately. Group I should be grouped separately from Group II given the different bases for rejection of these claims. Group I was rejected as being unpatentable over Sargent et al. alone while Group II was rejected as being unpatentable over Lindstrom et al. in view of Sargent et al.

ARGUMENT

Claim 36 is patentable over Sargent et al.

The Examiner rejected claim 36 as being obvious under 35 U.S.C. § 103(a) over Sargent et al. (U.S. Patent No. 5,234,466). Final Office Action, May 15, 2003, p. 2. Appellants respectfully request that the Board reverse this rejection.

The Examiner stated that Sargent et al. discloses a method for adjusting the pH of a process stream or solution of a papermaking process substantially as claimed, noting that the claims differ from Sargent et al. by reciting that the process stream is not a bleaching solution, and includes a group of process streams excluding a bleaching solution. The Examiner submitted that "Sargent et al. does not appear to be limited to bleaching solutions, and appears to include the treatment of any process stream where acid has been traditionally used." Final Office Action, May 15, 2003, p. 2 (*citing* Sargent et al. col. 1, ll. 54-61 and col. 3, ll. 4-13). The Examiner asserted that it would have been obvious to one skilled in the art to modify the method of Sargent et al. by adding urea sulfate to the recited process streams, to aid in adjusting the pH of the process streams. The Examiner has not provided any reference teaching (nor has he provided an affidavit memorializing the Examiner's personal knowledge under 37 C.F.R. § 1.104(d)) that motivates one of ordinary skill in the art to adapt the disclosure of Sargent et al. to the process streams recited in claim 36.

Despite his expansive reading of the Sargent et al. disclosure for the purposes of rejecting Appellants' claims, the Examiner applied a much narrower reading of the Sargent et al. disclosure for purposes of determining priority. The Examiner has refused to allow claim 36 the benefit of the Sargent et al. filing date, to which Appellants assert it is entitled. The Examiner alleges that claim 36 is not entitled to the benefit of the filing date of Sargent et al. because Sargent et al. lacks antecedent basis for the process streams recited in claim 36. The Examiner has inconsistently decided (incorrectly, in Appellants ' view) that the Sargent et al. disclosure is limited

to bleaching solutions when assessing whether Appellants' claims are entitled to benefit of the Sargent et al. filing date, and then taken the much more expansive view of the disclosure of Sargent et al. described above when evaluating obviousness. *See e.g.* May 15, 2003 Office Action, pages 2-4. Appellants submit that this double standard as to the teachings of Sargent et al. is improper. Either Sargent et al. suggests that the process disclosed therein can be applied to any paper process stream where acid has been traditionally used (in which case the disclosure of Sargent et al. reasonably indicates that the inventors had possession of the presently claimed invention as of the filing date of Sargent et al.), or it does not suggest that the process disclosed therein can be so applied, and the Examiner must cite some reference and provide motivation to combine its teachings with those of Sargent et al. in order to make a sustainable rejection for obviousness. In either case, the obviousness rejection of claim 36 is erroneous and Appellants respectfully request that the Board reverse this rejection.

Claims 1-6 are patentable over Lindstrom et al. in view of Sargent et al.

The Examiner rejected claims 1-6 under 35 U.S.C. § 103(a) as obvious over Lindstrom et al. in view of Sargent et al. Final Office Action, May 15, 2003, p. 2. Appellants respectfully request that the Board reverse this rejection.

The Examiner asserted that Lindstrom et al. discloses that it is known in the art to regulate the pH value of a papermaking process solution with aluminum sulfate (*citing* col. 1, ll. 55 - col. 2, ll. 60) and that Sargent et al. discloses that it is known in

the art to decrease the amount of acid required by a papermaking process, or to adjust the pH of a process stream or solution of a papermaking process stream by the addition of urea sulfate (*citing* col. 1, ll. 54-61; col. 3, ll. 4-13). The Examiner stated that it would have been obvious to one skilled in the art to modify the Lindstrom et al. method by adding urea sulfate in view of the Sargent et al., to aid in adjusting the pH of the stream or solution. Final Office Action, May 15, 2003, pp. 2-3.

Appellants do not dispute that it is known in the art to regulate pH of papermaking process solutions with aluminum sulfate. However, to the extent that Sargent et al. does not sufficiently disclose the subject matter of claims 1-6 for a claim to priority of Sargent et al. to be proper, it also does not teach or suggest that alum in these processes could be replaced by urea sulfate. If Sargent et al. does not include adequate disclosure, then it cannot include an appropriate teaching or suggestion. If Sargent et al. does include adequate teaching, then the claim to priority of Sargent et al. is proper. In an obviousness rejection, the teaching and suggestion for each element claimed must come from somewhere (*see e.g. In re Royka,* 490 F.2d 981 (C.C.P.A. 1974)). If the teaching or suggestion comes from Sargent et al., then the applicants are entitled to their claim to priority and Sargent et al. is not available as a reference against the claims. Once again, the Examiner takes a literal reading of the disclosure of Sargent et al. for purposes of determining priority, and then an expansive reading of Sargent et al. for determining obviousness.

The Examiner's conclusory statements that alum replacement would have been obvious without some teaching or suggestion in the cited art to do so, are

insufficient to sustain an obviousness rejection. Fairness and consistency demand that by denying Appellants' priority claim, the Examiner be held to have implicitly taken the position that Sargent et al. does not provide such motivation. Certainly Lindstrom et al. does not suggest alum replacement. "To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art." MPEP 2143.03 (*citing In re Royka,* 490 F.2d 981 (C.C.P.A. 1974)). The Examiner must cite a teaching or suggesting for every element of the claim. It is not enough to simply state that it is obvious to replace one pH modifier with another without regard to the underlying chemistry, unpredictable downstream effects, and the like, that can result not just from the addition of urea sulfate, but also from the removal of alum from the process. This is particularly true where, as the Examiner admits, alum performs more than just a pH regulation function when used in paper processing streams: "aluminum sulfate is traditionally added to paper production stocks or streams to improve filler retention and regulate pH values." May 15, 2003 Office Action, page 4. Appellants were the first to discover that urea sulfate could, in fact, be used as a replacement for alum without such effects.

No other references have been cited in the rejection; if the Examiner has personal knowledge of facts that would suggest that such replacement is desirable and would not otherwise interfere with paper processing operations, he should have made these facts of record in a declaration or affidavit under 37 C.F.R. § 1.104(d). Since he has not done so, the only place such a suggestion could have come from on this record is the Examiner's hindsight reconstruction of Appellants' claims. Hindsight is

not the appropriate standard for obviousness under the statute, however, and the Examiner's rejection is erroneous. Appellants respectfully request that the Board reverse this rejection.

CONCLUSION

For the foregoing reasons, the Examiner's rejections of claims 1-6 and 36 were erroneous and reversal of his decision and allowance of the these claims is respectfully requested.

The required fee of $ 165.00 for the filing of this Appeal Brief is enclosed herewith.

If additional fees are due, or an overpayment has been made, please charge any such additional fees or credit any overpayment to Deposit Account number 11-0855.

Respectfully submitted,

Camilla C. Williams

Camilla C. Williams
Reg. No. 43,992

OF COUNSEL:

KILPATRICK STOCKTON LLP
Suite 2800, 1100 Peachtree Street
Atlanta, Georgia 30309-4530
(404) 815-6188

APPENDIX A

1. A method of decreasing the amount of aluminum sulfate hydrate required by a pulping or papermaking process, comprising adding to a process stream or solution of said pulping or papermaking process an effective amount of urea sulfate.

2. The method of claim 1, wherein the urea sulfate is present in a molar ratio of urea to sulfuric acid of between about 1:4 and about 4:1.

3. The method of claim 2, wherein the urea sulfate is present in a molar ratio of urea to sulfuric acid of between about 2.5:1 and about 0.25:1.

4. The method of claim 3, wherein the urea sulfate is present in a molar ratio of urea to sulfuric acid of between about 2.0:1 and about 0.5:1.

5. The method of claim 4, wherein the urea sulfate is present in a molar ratio of urea to sulfuric acid of about 1:1.

6. The method of claim 1, wherein the process stream or solution is selected from the group consisting of a prehydrolysis solution, a pulping solution, a pulping effluent stream, a recycled pulping process stream, a washing solution or effluent, a bleaching solution, a sizing solution, a dyeing solution, and a papermaking effluent stream.

36. A method of adjusting the pH of a process stream or solution of a pulping or papermaking process comprising adding thereto a pH adjusting effective amount of urea sulfate, wherein the process stream or solution is selected from a prehydrolysis solution, a pulping solution, a pulping effluent stream, a recycled pulping process stream, a washing solution, a washing effluent, a sizing solution, a dyeing solution, or a papermaking effluent stream.